

3.24/0

28754
S/056/61/041/003/007/020
B125/B102

AUTHORS: Charakhch'yan, A. N., Tulinov, V. F., Charakhch'yan, T. N.

TITLE: Energy spectrum and time dependence of the intensity of protons of solar cosmic radiation

PERIODICAL: Zhurnal eksperimental'noy i teoreticheskoy fiziki, v. 41, no. 3(9), 1961, 735-746

TEXT: The authors report on stratospheric studies of the energy spectrum and the time dependence of the total proton intensity of solar cosmic radiation produced during the period of chromospheric eruptions. Measurements were made with radiosondes carried into the stratosphere by balloons. The number of discharges in a single counter and that of double coincidences in a telescope consisting of two Geiger-Müller counters were measured at various altitudes. The spectra of the various eruptions were similar, and did not essentially change throughout the eruptions (2-3 days). Primary protons are produced on the sun within a period much shorter than solar eruptions. The mechanism of proton production is the same in all eruptions. The integral energy spectrum of protons for E_p from 100 to

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Energy spectrum and time dependence...

28754
S/056/61/041/003/007/020
B125/B102

400 Mev can be represented as an exponential function of their kinetic energy E_p with the exponent $\gamma = 2.0$. The energy spectrum of solar protons becomes softer during the Forbush decrease ($\gamma \approx 5.5$). This and the simultaneous hardening of the spectrum of galactic protons indicate that: Solar corpuscular currents carrying along frozen magnetic fields are carriers of protons of solar cosmic radiation. This phenomenon can only be explained by the existence of magnetic traps in solar corpuscular currents. In addition to protons, also other particles with ranges of less than 7 mm Al penetrate into the stratosphere during the Forbush decrease. The origin of these particles, which are only found during the Forbush decrease, is unknown. The time dependences of the intensity of primary protons in flares in the stratosphere agree satisfactorily with computations performed on the basis of the theory of proton diffusion in the interplanetary medium with magnetic clouds as scattering centers. There are 7 figures, 2 tables, and 21 references: 9 Soviet and 12 non-Soviet. The three most recent references to English-language publications read as follows: R. L. Arnoldy, R. A. Hoffman, J. R. Winkler, J. Geophys. Res., 65, 3004, 1960; C. J. Fan, P. Neyer, J. A. Simpson, Phys. Rev. Lett., 5, 269, 1960; J. C. Anderson, R. L. Chasson, M. P. Lifshitz, T. Suda. J.

Card 2/4

Energy spectrum and time dependence...

28754
S/056/61/041/003/007/020
B125/B102

Geophys. Res., 65, 3889, 1960.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR
(Physics Institute imeni P. N. Lebedev of the Academy of
Sciences USSR). Institut yadernoy fiziki Moskovskogo
gosudarstvennogo universiteta (Institute of Nuclear
Physics of Moscow State University)

SUBMITTED: April 27, 1961

Legend to Table 1: (1) Date of measurement; (2) time of measurement
(world time); (τ) in hr, duration of measurement.

Card 3/4

CHARAKHCHYAN, A. N.; CHARAKHCHYAN, T. N.

"Cosmic Radiation Levels in the Stratosphere during the period from July 1957 to July 1952."

report presented at the 13th Gen Assembly, IUGG, Berkeley, Calif, 19-31 Aug 63.

42127

3.2410

S/203/62/002/002/002/017

1046/I246

AUTHORS: Charakhch'yan, A. N. and Charakhch'yan, T. N.

TITLE: New data on cosmic ray flares on the sun (reported at the International Conference on Cosmic Rays in Kyoto, Japan, on September 4, 1961)

PERIODICAL: Geomagnetizm i aeronomiya, v. 2, no. 2, 1962, 233-237

TEXT: Measurements of proton absorption in 7 mm Al during the anomalously large cosmic ray flares in the stratosphere (results of proton acceleration in solar chromospheric flares) show that a) the energy spectra of solar protons are highly uniform in the absence of magnetic storms and Forbush decrease (F. d.), and b) the spectrum during F. d. is surprisingly rich in low-energy protons (the indices of the integral spectrum of solar protons are ~ 2.0 and 5.5 before and during F. d. respectively). Result (b) shows that the solar protons being unaffected by magnetic storms, are ferried by the corpuscular streams, in magnetic traps. Assuming diffusion of protons in interplanetary space, the authors obtain the diffusivity $D = 5.5 \cdot 10^{21}$ cm²/sec for ~ 0.5 Bev protons which gives a free path of 10^{12} cm (about 1/10 of the Sun-Earth distance) before the protons scatter on $\geq 1.5 \cdot 10^{-6}$ gauss magnetic clouds. During F. d., incursion of particles with < 7 mm Al paths (presumably electrons) was also observed. There are 3 figures and 1 table.

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva AN SSSR (Physical Institute im. P. N. Lebedev AS USSR)

SUBMITTED: October 25, 1961

Card 1/1

S/203/62/002/004/001/018
1046/1242

AUTHORS: Charakhch'yan, A.N. and Charakhch'yan, T.N.

TITLE: Solar cosmic rays in May and July 1961

PERIODICAL: Geomagnetizm i aeronomiya, v.2, no.4, 1962, 626-629

TEXT: The article reports on the maximum cosmic ray intensity in the stratosphere as measured at 64°N (Olen'ya), 51°N (Dolgoprudnyy), and 41°N (Simeize) between July 10 and 25, 1961. The authors also describe the flare of May 9, 1961. At 8:30, the cosmic ray intensity increased by a factor of 3; at 11:30, by a factor of 2; life time of the flare was ~10 hours. There are 3 figures. ✓

ASSOCIATION: Fizicheskiy institut im. P.N. Lebedeva AN SSSR; Moskovskiy gosudarstvennyy universitet, Institut yadernoy fiziki (The Physical Institute im. P.N. Lebedev, AS USSR; Moscow State University, Institute of Nuclear Physics)

SUBMITTED: April 4, 1962

Card 1/1

CHARAKHCH'YAN, A.N.; CHARAKHCH'YAN, T.N.

Solar cosmic rays in May and June 1961. Geomag. i aer. 2 no.4:626-629
Jl-Ag '62. (MIRA 15:10)

1. Fizicheskiy institut imeni P.N.Lobedeva AN SSSR i Moskovskiy
gosudarstvennyy universitet, Institut yadernoy fiziki.
(Solar radiation)

CHARAKHCH'YAN, A.N.; CHARAKHCH'YAN, T.N.

Flares of cosmic ray intensity in the stratosphere and
chromospheric flares of the sun. Geomag. i aer. 2 no.5:829-835
S-0 '62. (MIRA 15:10)

1. Fizicheskiy institut im. P.N. Lebedeva.
(Solar radiation)

CHARAKHCHYAN, A. N.; CHARAKHCHYAN, T. N.

"Cosmic Ray Flares at the Sun."

report presented at the 13th Gen Assembly, IUGG, Berkeley, Calif, 19-31 Aug 63.

CHARAKHCHYAN, T. N.

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VAKULOV, P.V., VERNOV, S.N., GONCHARENKO, YE.V., LOGACHEV, YU.I.
CHARAKHCHYAN, A.N., CHARAKHCHYAN, T.N., GONCHARENKO, A. YE.

Cosmic rays in the stratosphere and their correlation with
solar activity.

Report to be submitted for Space Research Committee on COSPAR 6th
plenary meeting
Warsaw, Poland 11 June 63-

L 19728-63 EWT(1)/BDS/EEC-2/ES(v) AFFTC/ASD/AFMDC/ESD-3/APGC PI-4/

~~PO-4/FE-4/PQ-4~~ PT-2/GW

ACCESSION NR: AP3004005

9/0203/63/003/004/0604/0607

AUTHORS: Charakhch'yan, A. N.; Charakhch'yan, T. N.

182

82

TITLE: Secular variation of cosmic ray intensity in stratosphere

SOURCE: Geomagnetizm i aeronomiya, v. 3, no. 4, 1963, 604-607

TOPIC TAGS: cosmic ray, stratosphere, solar activity, sunspot

ABSTRACT: The results of systematic cosmic ray intensity measurements in the stratosphere at latitudes 64, 51, and 41° N are reported. An attempt is made to obtain information on intensity fluctuations of primary cosmic rays with energies 0.1, 1.3, and 4.0 Bev (for protons). It is found that the secular variations in cosmic ray intensity during the period between maximum and minimum solar activity exhibits a discontinuous or an abrupt nature. Sharpest variation of intensity was observed during periods January-February and October-December of 1961. It is shown that the general pattern of intensity variations correlates well with solar activity, characterized by the relative number of sunspots. "The authors express their gratitude to S. N. Vernov, N. A. Dobrotin, and M. G. Krivonosov."

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L 19728-63

ACCESSION NR: AP3004005

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Also acknowledged are the members who gathered the data: F. Kh. Mochakov, I. K. Marshanov, V. V. Bayarevich, P. N. Ageshin, A. E. Golenkov, V. N. Sokolov, V. S. Malofeyev, A. F. Krasotkin, V. N. Makunin, I. N. Suvorov, K. R. Nikitin, Yu. S. Zhukov, A. I. Istratova, G. V. Tyurenkova, G. V. Yastrebtseva, K. A. Bogatskaya, Z. A. Ovchininkova, A. F. Biryukova, T. P. Komarova. Orig. art. has: 3 figures.

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSR, Moskovskiy gosudarstvennyy universitet institut yadernoy fiziki (Institute of Physics, Academy of Sciences, SSSR; Moscow State University, Institute of Nuclear Physics)

SUBMITTED: 04Jan63

DATE ACQ: 15Aug63

ENCL: 00

SUB CODE: AS

NO REF SOV: 004

OTHER: 000

Card 2/2

A. N. CHARAKHCHYAN, T. N. CHARAKHCHYAN

Energy spectrum of galactic cosmic rays (Calculations)

report submitted for the 8th Intl. Conf. on Cosmic Rays (IUPAP), Jaipur India,
2-14 Dec 1963

CHARAKHCHYAN, A.N.; CHARAKHCHYAN, T. N.

**Secular Variation of Cosmic Ray Intensity in the Stratosphere and the Primary
Cosmic Ray Energy Spectrum**

Report submitted for the 8th Intl. Conf. on Cosmic Rays (IUPAP), Jaipur, India,
2-14 Dec 1963

ACCESSION NR: AP4040707

S/0203/64/004/003/0458/0463

AUTHOR: Babary*kin, V. K.; Bayarevich, V.V.; Stozhkov, Yu. I.; Charakhoh'yan, T.N.

TITLE: Latitudinal measurements of cosmic-ray intensity in the stratosphere

SOURCE: ~~Geomagn. i aeronomiya~~ aeronomiya, v. 4, no. 3, 1964, 458-463

TOPIC TAGS: cosmic ray intensity, stratosphere, equatorial belt, sounding flight, geomagnetic latitude, extrapolation, communication coefficient

ABSTRACT: The intensity of cosmic rays in the stratosphere was measured on board the steamship "Estoniya" which sailed from Leningrad to the shores of Antarctica. At the same time, observations with identical instruments were carried out at Murmansk, Moscow, and Alma Ata. Data obtained at these places and in the equatorial belt in December 1962 are represented graphically. The curves are similar. The sounding flights reached heights of 27—30 km, from which the intensity of cosmic rays could be determined at low pressures and at various geomagnetic latitudes. Attempts to determine the intensity

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ACCESSION NR: AP4040707

of cosmic rays at the upper boundary of the atmosphere by extrapolation yielded exaggerated results. Data on the latitudinal distribution of cosmic-ray intensity are used for computing the coupling coefficients. Numerical values of the coupling coefficients for all stations are given in a table. Orig. art. has: 4 figures, 2 tables, and 6 formulas.

ASSOCIATION: Vostnaya Sovetskaya Antarkticheskaya ekspeditsiya AN SSSR (Eighth Soviet Antarctic Expedition, AN SSSR); Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Institute of Physics, AN SSSR); Moskovskiy gosudarstvennyy universitet, Institut yadernoy fiziki (Moscow State University, Institute of Nuclear Physics)

SUBMITTED: 14Oct63

ATD PRESS: 3041

ENCL: 00

SUB CODE: AA

NO REF SOV: 008

OTHER: 002

Card 2/2

A. N. CHARAKHCHYAN, T. N. CHARAKHCHYAN

Energy spectrum of galactic cosmic rays (Calculations)

report submitted for the 8th Intl. Conf. on Cosmic Rays (IUPAP), Jaipur India,
2-14 Dec 1963

CHARAKHCHYAN, A.N.; CHARAKHCHYAN, T. N.

Secular Variation of Cosmic Ray Intensity in the Stratosphere and the Primary
Cosmic Ray Energy Spectrum

Report submitted for the 8th Intl. Conf. on Cosmic Rays (IUPAP), Jaipur, India,
2-11 Dec 1963

CHARANHOCH'YAN, A.N.; CHARANHOCH'YAN, T.N.

Some results of calculating the energy spectrum of galactic cosmic rays. Izv. AN SSSR Ser. fiz. 28 no.12:1526-1929 D :64 (MIRA 18:2)

Secular variation of cosmic rays in the stratosphere and the energy spectrum of cosmic rays. Ibid.:1959-1962

Forbush decrease of cosmic ray intensity according to stratospheric data. Ibid.:1963-1965

L 23403-65 EWT(1)/EWG(v)/FCC/EEC-4/EEC(7)/EWA(h) Po-4/Pe-5/Pq-4/Pae-2/Peb/ 398
PI-4 GN/WS
ACCESSION NR: AP5002097 S/0048/64/028/012/1959/1962

AUTHOR: Charakhch'yan, A. N.; Charakhch'yan, T. N.

TITLE: Secular rate of the intensity of cosmic rays in the stratosphere and the energy spectrum of primary cosmic rays

SOURCE: AN SSSR, Izvestiya. Seriya fizicheskaya, v. 28, no. 12, 1964, 1959-1962

TOPIC TAGS: cosmic ray, cosmic ray intensity, intensity fluctuation, geomagnetic storm, Forbush effect, stratosphere, geomagnetic latitude, solar activity cycle, Wolf number, primary cosmic ray

ABSTRACT: Cosmic ray intensity has been studied for geomagnetic latitudes of 64°, 51°, and 41°. Processed data are represented by graphs which show irregular fluctuations in cosmic ray intensity. A good correlation between irregularities is demonstrated at 51° and 64° lat. Some fluctuations are caused by geomagnetic storms followed by Forbush effects in the stratosphere. An increase in cosmic ray intensity is associated with higher geomagnetic latitudes and with

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L 23403-65

ACCESSION NR: AP5002097

time. There is a correlation between the secular rate of cosmic ray variations and the 11-year cycle of solar activity (Wolf number). The particle number in the stratosphere at several points on the earth is the basis of the study of the energy spectrum of particles of primary cosmic rays in relation to the solar activity cycle. The results are represented graphically in the original article, and the curves show a uniform change in the particle number during the solar activity cycle. Orig. art. has: 3 figures and 1 table. [EG]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: AA

NO REF SOV: 004

OTHER: 000

ATD PRESS: 3174

Card 2/2

L 23404-65 EWT(1)/EWG(v)/FCC/EEC-4/EEC(t)/EWA(h) Po-4/Pe-5/Pq-4/Pae-2/Peb/P1-4
ACCESSION NR: AP5002098 GN/WS S/0048/64/028/012/1963/1965

AUTHOR: Charakhch'yan, A. N.; Charakhch'yan, T. N. B

TITLE: Forbush decreases in the intensity of cosmic rays according to data obtained in the stratosphere

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 28, no. 12, 1964, 1963-1965

TOPIC TAGS: cosmic ray intensity, stratosphere, magnetic storm, geomagnetic latitude, primary cosmic ray

ABSTRACT: Thirty-five cases of decreases in the intensity of cosmic rays in the stratosphere which were followed by magnetic storms have been recorded at geomagnetic latitudes of 51° and 41°. Data obtained in the stratosphere at 41° lat agreed with those obtained on the ground. Variations in the particle number obtained on the earth's surface correspond to the variations of primary cosmic rays, the energy of which is between 1.5 Bev and 4.6 Bev. A table is given in the original article which contains the ratios of intensities of primary cosmic rays measured on the ground to those measured in the

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L 23404-65

ACCESSION NR: AP5002098

stratosphere at 51° and 41° lat and also ratios of variations of
primary cosmic rays in the stratosphere at 51° lat to those measured
on the ground. The numerical values given in the table do not vary
from storm to storm. Orig. art. has: 1 figure, 1 table, and 1 formula.
[EG]

ASSOCIATION: none

SUBMITTED: 00

ENCL: 00

SUB CODE: AA

NO REF SOV: 006

OTHER: 000

ATD PRESS: 3174

Card 2/2

BABARYKIN, V.K.; BAYAREVICH, V.V.; STOZHNIKOV, Yu.I.; CHARAKHCH'YAN, T.N.

Latitudinal measurements of cosmic ray intensity and coupling
factors in the stratosphere. Izv. AN SSSR Ser. fiz. 28 no.12:
2026-2028 D '64 (MIRA 18:2)

1. Vost'maya sovetskaya antarkticheskaya ekspeditsiya AN SSSR,
Fizicheskii institut imeni Lebedeva AN SSSR i Nauchno-issledo-
vatel'skiy institut yadernoy fiziki Moskovskogo gosudarstvennogo
universiteta imeni Lomonosova.

L 48310-65 ENG(j)/FSS-2/EWT(1)/EWT(m)/ENG(v)/FCC/EEC-4/EEC(t)/T/ETA(h) P1-4/
 Po-4/Pe-5/Pq-4/Pae-2/PeB IJP(c) G1-2 UR/0203/65/005/002/0220/0225

ACCESSION NR: AP5010265

AUTHOR: Charakhch'yan, A. N.; Charakhch'yan, T. N.

TITLE: On the energy spectrum of protons and α -particles in cosmic rays of solar flares

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 2, 1965, 220-225

TOPIC TAGS: differential energy spectrum, primary solar proton, stratosphere, cosmic ray, proton spectrum, solar wind, nuclear photoemulsion, alpha particle

ABSTRACT: The differential energy spectrum of primary solar protons with energies of 100—170 Mev has the exponent $\gamma \sim 6$. A comparison of data obtained on the ground with those obtained in the stratosphere during a low-energy flare showed that the exponent could be about 3. Further measurements indicated that cosmic rays with energies of hundreds of Mev may be associated with a spectral exponent $\gamma \sim 3.0$ if they are measured in the stratosphere. The same cosmic rays measured on the ground may be associated with the exponent $\gamma \sim 6$. This proton spectrum is connected with a supplementary proton flow carried by the magnetic field and captured from the solar wind in interplanetary space. The spectra of cosmic rays with energies of hundreds of Mev generated in various flares coincide with one another. Energy spectra of

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L 48310-65

ACCESSION NR: AP5010265

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solar α -particles and nuclei are obtained by nuclear photoemulsions carried by balloons and rockets. Measurements in the stratosphere yielded α -particle energies of 320—800 Mev, and measurements taken at great heights by means of rockets yielded 120—480 Mev. Spectra from both types of measurements are represented graphically. Both graphs show a similarity of curves. Orig. art. has: 3 figures, 2 formulas, and 4 tables. [EG]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Institute of Physics, AN SSSR); Institut yadernoy fiziki, Moskovskiy gosudarstvennyy universitet (Institute of Nuclear Physics, Moscow State University)

SUBMITTED: 27 July 64

ENCL: 00

SUB CODE: AA

NO REF SOV: 008

OTHER: 008

ATD PRESS: 3252

Card 2/2

L 48311-55 EMG(j)/ENT(1)/ENT(m)/ENG(v)/ECG/EC-4/EEC(t)/T/ENA(h) Po-4'

Pe-5/Pq-4/Fac-2/Feb/Pi-4 IJP(c) CW

UR/0203/65/005/002/0226/0229

ACCESSION NR: AP5010266

AUTHOR: Charakhch'yan, A. N.; Charakhch'yan, T. N.

TITLE: On the diffusion coefficient of solar cosmic ray protons in the interplanetary medium

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 2, 1965, 226-229

TOPIC TAGS: chromospheric flare, flare emission, interplanetary medium, cosmic ray, corpuscular stream, stratosphere, magnetic shell

ABSTRACT: Two types of dependence in time of flare emissions on the electromagnetic state of the interplanetary medium are discussed. The first type includes cosmic rays which are generated on the western side of the solar disk and propagate freely in space between the Sun and the Earth, independently of other chromospheric flares. The second type consists of temporary radiation from the flare with particles that penetrate into the regular stream of a previous chromospheric flare. Four cases of flares related to the first type are discussed. The propagation of cosmic rays occurred freely without corpuscular streams in space. The results obtained were represented graphically. Graphs of observation data obtained on the ground resemble the curve obtained in the stratosphere. Three cases of flares of the second type

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ACCESSION NR: AP5010266

are discussed. In one case, cosmic rays generated in an active solar region reached the earth when the latter was surrounded by the corpuscular stream of a previous flare. The motion of solar cosmic rays is considered as motion within a magnetic shell of corpuscles ejected during a previous flare. Similar processes took place in other cases. Orig. art. has: 2 figures and 2 formulas. [EG]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva AN SSSR (Institute of Physics, AN SSSR); Institut yadernoy fiziki, Moskovskiy gosudarstvennyy universitet (Institute of Nuclear Physics, Moscow State University)

SUBMITTED: 27 Jul 64

ENCL: 00

SUB CODE: AA

NO REF SOV: 004

OTHER: 005

ATD PRESS: 3252

Card 2/2

L 3645-66 EWT(1)/FCC/EWA(h) GW

ACCESSION NR: AP5026221

UR/0048/65/029/010/1800/1804

AUTHOR: Charakhch'yan, A. N.; Charakhch'yan, T. N.

TITLE: Several problems on the generation of cosmic rays by the sun and their propagation into interplanetary space

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 10, 1965, 1800-1804

TOPIC TAGS: differential energy spectrum, proton, exponential function, proton spectrum, corpuscular stream, chromospheric flare, interplanetary space, solar atmosphere

ABSTRACT: Measurements proved that the differential energy spectrum of protons may be expressed as an exponential function with the exponent $\gamma = 6$ when the energy is several hundred Mev. The exponent γ of the proton spectrum was found to equal 3 before the arrival of corpuscular streams from a chromospheric flare, and it reached the value of 6 when the earth was in the stream of a chromospheric flare. The spectral exponent 3 relates to protons freely diffusing into interplanetary space from the sun, and the exponent 6 must be related to an additional stream of protons carried by magnetic traps. One part of solar protons propagates freely and reaches the earth earlier than the other, which is trapped by the

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L 3645-66

ACCESSION NR: AP5026221

magnetic field and propagates slowly. The constancy of energy spectra of flares indicates that the particle acceleration in flares is constant and does not depend upon solar atmospheric processes. Two graphs in the original article represent data of measurements of differential spectra of protons, α -particles, and nuclei of the M group. Spectra of protons and α -particles of two flares are represented by the same curves. A table in the original article contains ratios of the number of α -particles to the number of protons and the number of nuclei to the number of protons determined from various flares. The first ratio is usually equal to 0.25, and the second ratio is always equal to 0.14 in the cases shown in the table. The formation of spectra of charged particles of cosmic rays is very complicated and has no relation to the chemical elements in the sun. Orig. art. has: 3 figures and 1 table. [EG]

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics, Academy of Sciences, SSSR); Institut yadernoy fiziki Moskovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Institute of Nuclear Physics, Moscow State University)

SUBMITTED: 00

ENCL: 00

SUB CODE: AA

NO REF SOV: 009

OTHER: 008

ATD PRESS: 7/16

Card 2/2 (book)

VERNOV, S.N.; CHARAKHCH'YAN, A.N.; BABARYKIN, V.K.; BAYAREVICH, V.V.;
STOZHKOY, Yu.I.; CHARAKHCH'YAN, T.N.

Measurements of the intensity of cosmic rays in the stratosphere
over Antarctica. Izv. AN SSSR.Ser.fiz. 29 no.10:1805-1806 0 '65.

(MIRA 18:10)

1. Fizicheskiy institut im. P.N.Lebedeva AN SSSR; Nauchno-
issledovatel'skiy institut yadernoy fiziki Moskovskogo
gosudarstvennogo universiteta im. M.V.Lomonosova i VIII Sovet-
skaya antarkticheskaya ekspeditsiya.

AGESHIN, P.N.; KOLOMEYETS, Ye.V.; CHARAKHCH'YAN, A.N.; CHARAKHCH'YAN, T.N.

Secular variation in cosmic ray intensity in the stratosphere
during the period 1962-1964. Izv. AN SSSR.Ser.fiz. 29 no.10:1901-
1902 0 '65. (MIRA 18:10)

L 2321-66 EWT(d)/EWT(1)/EEC(k)-2/FCC/EWA(h) GS/GW

ACCESSION NR: AT5023618

UR/0000/65/000/000/0454/0460

AUTHORS: Vernov, S. N.; Lisutin, L. L.; Charakhch'yan, A. N.; Charakhch'yan, T. N.

TITLE: Outer Van Allen belt and bursts of x-rays in the stratosphere

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 454-460

TOPIC TAGS: radiation belt, x ray, stratosphere, magnetic storm, solar activity, Van Allen belt

ABSTRACT: Observations of bursts of x-rays in the stratosphere, which are apparently the result of bremsstrahlung of high-energy electrons trapped in the magnetic field of the earth, are discussed. The work and results from a number of American and Soviet groups are described. The results of observations made during 1964 above Murmansk and Mirnyy are presented, giving the integrated photon energy spectra and the dependence of count rate on pressure for the four events described. By comparison with the previous results, it was found that increased radiation in

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ACCESSION NR: AT5023618

the stratosphere is correlated with recurrent magnetic storms, with large ionospheric disturbances, and, in the aurora zone, with the absorption of radio waves in the F2 layer of the ionosphere. Toward the minimum of solar activity the frequency of x-ray bursts remained unchanged, and the photon energy spectrum became more stable. Satellite measurements made at the same time showed no increase in galactic cosmic ray intensity. Since the number of high-energy electrons in the outer Van Allen belt is insufficient to explain the intensity of x-rays in the stratosphere, it is concluded that the x-rays must be caused, in part, by an additional flux of electrons produced by transient electron-accelerating processes occurring in the magnetosphere of the earth. Orig. art. has: 3 figures and 3 tables. [04]

ASSOCIATION: none

SUBMITTED: 02Sep65

ENCL: 00

SUB CODE: AA, ES

NO REF SOV: 007

OTHER: 008

ATD PRESS: 4107

Card 2/2 md

L 1536-66 EWT(1)/FCC/EWA(h) GS/GW

ACCESSION NR: AT5023637

UR/0000/65/000/000/0547/0552

AUTHOR: Charakhch'yan, A. N.; Charakhch'yan, T. N.
44,55 44,55

TITLE: Generation of cosmic rays on the sun
12,44,55 12,55

SOURCE: Vsesoyuznaya konferentsiya po fizike kosmicheskogo prostranstva. Moscow, 1965. Issledovaniya kosmicheskogo prostranstva (Space research); trudy konferentsii. Moscow, Izd-vo Nauka, 1965, 547-552
44,55

TOPIC TAGS: chromospheric flare, cosmic ray burst, stratosphere, primary component, magnetic storm, ionospheric perturbation, energetic spectrum, galactic cosmic ray, absorption curve

ABSTRACT: Three strong chromospheric flares occurred in 1959 followed, after intervals of several days, by bursts of cosmic rays in the stratosphere with intensity of the primary components 200, 800, and 2800 times greater than the ordinary level. Bursts of cosmic rays followed chromospheric flares at intervals of several hours, and magnetic storms and ionospheric perturbations followed them at intervals of approximately one day. Energy spectra of protons in primary cosmic rays were studied by measuring the absorption of protons in the upper layers of the atmosphere. The intensity of cosmic rays of galactic origin attained a maximum at 16-22 km and de-

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L 1536-66

ACCESSION NR: AT5023637

creased at higher altitudes. No maximum was observed at high latitudes, and the intensity increased gradually with altitude. The numbers of particles created at various heights during bursts were measured, and measurements of the numbers of particles at the same heights carried out before bursts were compared. The differences were then used for constructing absorption curves as functions of the pressure in the stratosphere. It was concluded from comparing the absorption curves of many bursts that the indices of differential energy spectra of protons measured before the arrival of solar corpuscular streams from chromospheric flares and having energies of millions of electron-volts lie near 3.0. Indices of the same proton spectra measured after the arrival of corpuscular streams were near 6.0. This difference in indices was explained by two kinds of protons. Proton spectra with indices near 3.0 belong to protons leaving the sun and diffusing freely into interplanetary space, and spectra with indices near to 6.0 belong to supplementary streams of fast protons carried by magnetic traps. Orig. art. has: 4 figures and 1 table. [EG]

ASSOCIATION: none

SUBMITTED: 02Sep65

ENCL: 00

SUB CODE: AA,ES

NO REF SOV: 005

OTHER: 003

ATD PRESS: 497

Card 2/2

L 6952-66 EWT(1)/EWA(h)/FCC GW

ACC NR: AP5026231

SOURCE CODE: UR/0048/65/029/010/1888/1890

AUTHOR: Bazilevskaya, G.A.; Charakhch'yan, T.N.

ORG: none

TITLE: Some data on the 27-day variation of cosmic ray intensity in the stratosphere /Report, All-Union Conference on Cosmic Ray Physics held at Apatity, 24-31 August 1964/

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 10, 1965, 1888-1890

TOPIC TAGS: Cosmic ray intensity, stratosphere, neutron flux, cosmic ray variation, periodic variation

ABSTRACT: Cosmic ray intensity periodograms based on the preceding six months data on the maximum cosmic ray intensity in the stratosphere over Moscow and the sea level neutron intensity as recorded at Herstmancaux or Deep River have been constructed at monthly intervals beginning in 1957; some of these periodograms are presented and discussed. The 27 day period was apparent not only in 1957, but also in 1958 and throughout most of 1963, i.e., at times during which solar activity was near minimum. On many of the periodograms there were prominent maxima in both the stratosphere and the sea level data corresponding to periods between 20 and 23 days, and some periodograms showed two maxima, one at 22 days and one at 30 days. The shape of the 22

Card 1/2

1 6952-86

ACC NR: AP5026231

3
day wave was the same in the stratosphere and the sea level data, but the ratio of the amplitude of the 22 day wave in the stratosphere to that at sea level ranged from 5 for the period October 1958 - March 1959 to 1 for the period February 1950 - July 1959. The reason for the 22 day period is not known.

The authors thank A.N.Charakhch'yan for valuable advice and A.M.Kulikov and B.K.Artem'yev for programming the computer. Orig. art. has: 4 figures.

SUB CODE: AA

SUBM DATE: 00/--Oct65

ORIG.REF: 001

OTH REF: 000

Card 2/3 sub

CHARAKHCH'YAN, A.N.; CHARAKHCH'YAN, T.N.

Energy spectrum of protons and alpha particles from solar bursts of cosmic rays. Geomag. i aer. 5 no.2:220-225 Mr-Apr '65.

Coefficient of diffusion of protons in solar cosmic rays in the interplanetary space. Ibid.:226-229 (MIRA 18:7)

L 3646-66 INT(1)/FCC/EMA(h) ON

ACCESSION NR: AP5026222

UR/0048/65/029/010/1805/1806

AUTHOR: Vernov, S. N.; Charakhch'yan, A. N.; Babarykin, V. L.; Bayarevich, V. V.;
Stoshkov, Yu. I.; Charakhch'yan, I. N.

TITLE: Measurements of the intensity of cosmic rays in the stratosphere above
Antarctica

SOURCE: AN SSSR. Izvestiya. Seriya fizicheskaya, v. 29, no. 10, 1965, 1805-1806

TOPIC TAGS: cosmic ray, primary cosmic ray, outer radiation belt, artificial
radioactivity, critical energy, proton

ABSTRACT: Simultaneous measurements of the intensity of cosmic rays in both
hemispheres are of great importance for investigating low-energy primary
cosmic radiation, temperature effect, disturbances in the earth's outer radiation
belt, and artificial radioactivity in the stratosphere. Although the critical
energy in Murmansk is about 100 Mev and in Mirny about 10 Mev, measurements are
carried out in atmospheric layers above both places with a pressure of 10 g/cm²,
which can be penetrated by protons with energies above 100 Mev. Data obtained
simultaneously in Murmansk and Mirny are obtained at different seasons, and
they arrive from different directions in the atmosphere. Sounding takes place in
all stations at a given time. Four times a week cosmic rays are measured with a
Card 1/2

L 3646-65

ACCESSION NR.: AP5026222

single counter and two times with a special telescope. Results of measurements are represented graphically. The difference between Murmansk and Mirny varies, depending upon the season of the year. The difference is small when the pressure is between 20 and 200 g/cm². The difference increases at other pressures. Orig. art. has: 2 figures. (8C)

ASSOCIATION: Fizicheskiy institut im. P. N. Lebedeva Akademii nauk SSSR (Institute of Physics, Academy of Sciences, USSR); Nauchno-issledovatel'skiy institut yadernoy fiziki Moshkovskogo gosudarstvennogo universiteta im. M. V. Lomonosova (Scientific Research Institute of Nuclear Physics, Moscow State University); VIII Sovetskaya antarkticheskaya ekspeditsiya (VIII Soviet Antarctic Expedition)

SUBMITTED: 00

ENCL: 00

SUB CODE: AA, 85

NO REF SOV: 001

OTHER: 000

ATD PRESS: 416

Beh
Oct 1973

L 19364-66 EWT(1)/FCC/EWA(h) GW

ACCESSION NR: AP5021005

UR/0203/65/005/004/0757/0759
523.165:523.877

AUTHORS: Charakhch'yan, A. N.; Golenkov, A. Ye.; Charakhch'yan, T. N.

TITLE: Disruptions in the stratosphere of particles of the Van Allen belt

SOURCE: Geomagnetizm i aeronomiya, v. 5, no. 4, 1965, 757-759

TOPIC TAGS: stratosphere, ionosphere, Van Allen belt, flare, radio emission, bremsstrahlung

ABSTRACT: Several extraordinary surges in total ionized radiation in the stratosphere were recorded between January and April 1964 over Murmansk. These were not recorded at Antarctic stations, however. It seems most likely that the excessive radiation in the stratosphere was due to the Van Allen belt. Because of greater excitation, particles originating in the belt penetrated into the upper atmosphere and reached heights of about 15 km. Measurements on four different days are described in the text. A comparison of the measurements with geophysical phenomena shows that the occasions of excessive radiation in the stratosphere correlate with the K indices of geomagnetic activity with high ionospheric disturbances. For the auroral zones they correlate with the

Card 1/2

L 19364-66

ACCESSION NR: AP5021005

2
absorption of radio waves in the F2 layer of the ionosphere. No chromospheric flares or radio emission bursts were recorded for the sun during the investigated period. It is calculated that electrons penetrating the Van Allen belt are absorbed in the upper atmosphere, chiefly at pressures of $< 1 \text{ g/cm}^2$, and they yield bremsstrahlung photons, the penetrating capacity of which, depending on energy, is tens and hundreds of times that of the electrons. As a first approximation, primary radiation is due to photons forming in the upper atmosphere, and the effective energy of the photons may be found from experimental curves showing the radiation absorption in the stratosphere. Data for six measurements are tabulated. Orig. art. has: 1 figure and 2 tables.

ASSOCIATION: Fizicheskii institut im. P. N. Lebedeva, AN SSSR (Physical Institute, AN SSSR); Moskovskiy gosudarstvennyy universitet, Institut yadernoy fiziki (Moscow State University, Institute of Nuclear Physics)

SUBMITTED: 24Aug64

ENCL: 00

SUB CODE: ES, AA

NO REF SOV: 002

OTHER: 000

Card 2/2 BG

L 07132-67 EWI(1)/FCC GW
ACC NR: AP7001044

SOURCE CODE: UR/0203/66/006/003/0586/0587

AUTHOR: Charakhch'yan, A. N.; Sokolov, V. N.; Charakhch'yan, T. N. 34
B

ORG: Physics Institute im. P. N. Lebedeva, AN SSSR (Fizicheskii institut AN SSSR);
Institute of Nuclear Physics, Moscow State University (Moskovskiy gosudarstvennyy
universitet, Institut yadernoy fiziki)

TITLE: Interesting case of fluctuation of cosmic ray intensity in the stratosphere
on 3 December 1964

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 3, 1966, 586-587

TOPIC TAGS: cosmic ray intensity, radiosonde, geomagnetic field

ABSTRACT: The intensity of stratospheric cosmic rays varies continuously and in most cases these changes occur in the range of several percent. The case described in this paper is said to be of particular interest. The data of one of three measurements of stratospheric cosmic rays on 3 December 1964 over Dolgoprudnyy were higher than ordinary. The data fell on the curve obtained for cosmic ray intensity at Olen'ya station near Murmansk. The magnetic rigidity cutoffs of primary cosmic rays for Dolgoprudnyy and Olen'ya are ~ 2.2 and 0.5 GeV respectively. The measurements were made using cosmic ray radiosondes. The possibility of instrument errors was excluded. On the basis of the character of the measured fluctuation it is

Card 1/2

UDC: 523.165

09.24 00.56

07232-07

ACC NR: AF7001044

postulated that there was a decrease of the rigidity cutoff of cosmic rays over Dolgoprudnyy to ~ 0.5 BeV/sec. However, such a change would correspond to a very large and rather stable decrease of the geomagnetic field of about 0.1 oe, but this apparently did not occur. It therefore is necessary to find a more probable explanation of the described case. Orig. art. has: 1 figure. [JPRS: 36,794]

SUB CODE: 04, 08 / SUBM DATE: 14Aug65 / ORIG REF: 001

Card 2/2 *LC*

L 15778-66 EWT(1)/FCC/EWA(h) GW

ACC NR: AP6006666

SOURCE CODE: UR/0203/66/006/001/0126/0128

AUTHOR: Charakhch'yan, A. N.; Kvashnin, A. N.; Charakhch'yan, T. N.

ORG: Institute of Physics im. P. N. Lebedev, AN SSSR (Fizicheskiy institut AN SSSR); Moscow State University, Institute of Nuclear Physics (Moskovskiy gosudarstvennyy universitet, Institut yadernoy fiziki)

TITLE: Solar cosmic rays on 21 and 26 September 1963

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 1, 1966, 126-128

TOPIC TAGS: cosmic ray, stratosphere, chromospheric flare, interplanetary space, proton spectrum, magnetic heterogeneity, solar plasma, diffusion coefficient

ABSTRACT: On 21 and 26 September 1963, solar cosmic rays were simultaneously recorded at Oleniya in the Murmansk region and at Mirnyy in Antarctica. These rays were recorded in the stratosphere and were generated by a chromospheric flare of class 3+. Records at both stations coincided, confirming the isotropic scattering of solar cosmic rays in interplanetary space. Inclinations of integral proton spectra coincided for both the chromospheric flares of 21 and of 26 September. The exponential index of the integral spectrum was 3.6 for the energy range

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UDC: 523.165

L 15778-66

ACC NR: AP6006666

120—200 Mev. The isotropic motion of cosmic rays in the vicinity of the earth is caused by magnetic heterogeneities formed in interplanetary space by solar plasma with frozen magnetic fields. The density of plasma currents diminishes with the decrease of solar activity, which causes the increase in the diffusion coefficient of cosmic rays. An increase in the diffusion coefficient was found in the years 1961, 1962, and 1963 in comparison with the coefficient in 1960. A table in the original article contains the diffusion coefficient and the number of sunspot groups for 1960, 1961, 1962, and 1963. Orig. art. has: 4 figures and 1 table. [EG]

SUB CODE: 04/ SUBM DATE: 07Jun65/ ORIG REF: 005/ OTH REF: 003/ ATD PRESS:

4200

Card 2/2

ACC NR: AP6033984

SOURCE CODE: UR/0203/66/006/003/0486/0493

AUTHOR: Charakhch'yan, A. N.; Charakhch'yan, T. N.

ORG: Physics Institute im. P. N. Lobodov, AN SSSR (Fizicheskii institut AN SSSR);
Institute of Nuclear Physics, Moscow State University (Institut yadernoy fiziki
Moskovskogo Gosudarstvennogo Universiteta)

TITLE: Secular changes of cosmic ray intensity and the 11-year cycle of solar activity 12

SOURCE: Geomagnetizm i aeronomiya, v. 6, no. 3, 1966, 486-493

TOPIC TAGS: cosmic radiation, solar cycle, solar activity

ABSTRACT: A. N. Charakhch'yan and T. N. Charakhch'yan have analyzed data on the secular changes of cosmic ray intensity in the stratosphere in 1957-1964. The secular changes of intensity in interplanetary space are caused almost completely by the 11-year cycle of solar activity. The authors determined some spatial and temporal patterns of cosmic ray modulation in interplanetary space. The radius r of a sphere around the sun, within which the modulation of galactic cosmic rays occurs, is dependent on solar activity. The total intensity of galactic cosmic rays at the earth ($p = 0.5$ BeV) in late 1964 attained almost 90-95% of the value corresponding to the intensity of cosmic rays outside the sphere of modulation. It is concluded that in the

Cord 1/2

UDC: 523.165

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ACC NR: AP6033984

period of the minimum of solar activity there is no appreciable difference of the energy spectra of galactic cosmic rays at the earth and beyond the limits of the modulation region. The authors thank S. N. Vernov and N. A. Dobrotin for their interest in the experiments and their discussions of the results. Orig. art. has: 5 figures, 12 formulas, and 1 table. [JPRS: 37,058]

SUB CODE: 03 / SUBM DATE: 23Aug65 / ORIG REF: 007 / OTH REF: 007

Card 2/2

STEIN, W.;CHARAL, M.;MOTYKA, I. Z.

~~Psychotic oculomotor attacks and Pavlov's neuro-dynamic localization theory.~~
Psychotic oculomotor attacks and Pavlov's neuro-dynamic localization theory. Polski tygod. lek. 7 no. 5-6:113-120 4 Feb 1952. (CLML 22:4)

1. Of the Departments of Nervous Disorders (Head--Lt. Col. Wl. Stein, M. D.) of Military Clinical Hospital in Lodz and of Kochanowska State Psychiatric Hospital (Head--L. Prusak, M. D.) near Lodz.

PRUSAK, Leon; LASKOWSKA, Danuta; CHARAL, Natalia; WIERZBICKA, Irena;
RADOMSKA, Maria; ZIMNY, Stefan

Further observations on application of hemolysed autogenous
blood in certain diseases of the nervous system. Polski tygod.
lek. 11 no.9:395-398 27 Feb 56.

1. Z Oddz. Neur. Szpitala im. dr. J. Babinskiego w Lodzi;
ordynator; dr. Leon Prusak i s Laboratorium tego szpitala;
kier. mgr Stefan Zimny. Lodz, ul. Sienkiewicza 29, m 13.

(NERVOUS SYSTEM, Diseases,

ther., autohemother. with hemolysed blood. (Pol))

(SERO THERAPY,

autohemother. with hemolysed blood in dis. of nervous
system. (Pol))

I 36211-66

ACC NR: AP6018028

SOURCE CODE: PO/0019/65/014/003/0637/0655

AUTHOR: Charamiec, J.

ORG: Department of Radio Receiver Engineering, Gdansk Polytechnical Institute
(Katedra Radiotechniki Odbiorczej, Politechnika Gdanska)

TITLE: Circuit analysis of a superregenerative parametric amplifier

SOURCE: Archiwum elektrotechniki, v. 14, no. 3, 1965, 637-655

TOPIC TAGS: parametric amplifier, regenerative amplification, electronic circuit, frequency characteristic, phase shift analysis, frequency conversion

ABSTRACT: A circuit analysis is given for a parametric amplifier operating under conditions of linear supergeneration with a pumping frequency generator which has a square envelope. The substitutional circuit and simplifying assumptions used in the analysis are given. Formulas are derived for voltage gain, frequency response, passband width and phase shift for the cases of direct amplification and frequency conversion. A low-frequency model of a superregenerative parametric amplifier is built and tested to verify the circuit analysis. The results are tabulated and graphed. A comparison of the theoretical and experimental data shows satisfactory agreement. Possible sources of error are discussed. Orig. art. has: 5 figures, 2 tables, 56 formulas.

SUB CODE: 09/ SUBM DATE: 01Apr64/ ORIG REF: 000/ OTH REF: 008

Card 1/1

UDC: 621.375.1

CHARAMONIENKO, S.S.

The problem of the compatibility of donor's and recipient's blood
as related to auto- and iso-sensitization. Pol. med. wewniet. 32 no.7:
788-796 '62.

(BLOOD TRANSFUSION)

(BLOOD GROUP INCOMPATIBILITY)

CHARAMZA, F.

Utilisation of products of the stone industry in building, p. 321,
POZEMNI STAVBY, (Ministerstvo stavebnictvi) Praha, Vol. 3, No. 8,
Aug. 1955

SOURCE: East European Accessions List (EEAL) Library of Congress,
Vol. 45, No. 12, December 1955

CHARAMZA, F.

CHARAMZA, F. Treatment of surfaces of building bases. p. 287

Vol. 34, no. 8, Aug. 1956

STAVIVO

TECHNOLOGY

Praha, Czechoslovakia

So: East European Accession Vol. 6, no. 2, 1957

CHARANZA, F.

Sidewalk curbs from natural stone. p. 416

STAVIVO (Ministerstvo stavebnictvi) Vol. 34, No. 11, Nov. 1956

Praha, Czechoslovakia

SOURCE: East European List (EEAL) Library of
Congress, Vol. 6, No. 1, January 1957

Charanza, F.

Charanza, F. Paving blocks; remarks on the new standard 72 2510 Czechoslovak Standards. p. 24.

Vol. 35, no. 1, Jan. 1957
STAVIVO
TECHNOLOGY
Czechoslovakia

So. East European Accessions, Vol. 6, May 1957
No. 5

CHARAMZA, F.

Standardized slabs cut of natural stone. p. 341

STAVIVO. (Ministerstvo stavebnictvi) Praha, Czechoslovakia. Vol. 37, no. 10,
Oct. 1959

Monthly List of East European Accessions (EEAI) LC, Vol. 8, No. 12, Dec. 1959
Uncl.

9.7100 (1121)

26895
Z/024/61/007/001/001/002
D241/D306

AUTHOR: Charanza, František, Engineer

TITLE: Calculating two main geodetic problems with the aid
of the Ural 1 automatic computer

PERIODICAL: Geodetický a kartografický obzor, v. 7, no. 1, 6-11, 1961

TEXT: The article briefly describes the Ural I computer, shows how the machine can be used for the automatic calculation of two main geodetic problems, gives the programming, and shows what speed and accuracy can be obtained. The Ural I, is an electronic universal instrument, intended for technical-scientific work. It was built in the USSR by a team led by Engineer B.I. Rameyev of the Ministry of Precision Instruments. The computer has 800 tubes and over 3000 germanium diodes and is capable of 100 operations/sec. The single units are interchangeable and it contains 30 basic programmes. The components of the computer are:
1) the operating unit - for all mathematical and logical operations;

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D241/D306

Calculating two main...

2) Synchronizer - to synchronize the various units; 3) Memories, a) drum for 1024 words, b) auxiliary magnetic tape for use during operation and c) perforated tape memory (cine-film) for input and output information, 4) control - enabling overriding, 5) auxiliaries e.g. perforation, printing etc. The problem centers around Fig. 2: on the surface of a rotating ellipsoid of given parameters, there are given two points $P_1(\varphi_1, \lambda_1)$ and $P_2(\varphi_2, \lambda_2)$. These points are connected by a geodetic curve of length s , whose azimuths in the endpoints are marked α_1 and α_2 . If $\varphi_1, \lambda_1, \alpha_1, s$ (respectively $\varphi_1, \lambda_1, \varphi_2, \lambda_2$) are known and $\varphi_2, \lambda_2, \alpha_2$ (respectively α_1, α_2, s) are calculated, that gives the solution for the first (respectively the second) geodetic problem. For the first the method of integrating the differential equation of the geodetic curves was selected [Abstractor's note: The Runge - Kutt method] (For Eq. (1) see next card)

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D241/D306

Calculating two main...

$$\begin{aligned} \frac{d\varphi}{ds} = \varphi = \frac{\cos \alpha}{M} \quad \frac{d\lambda}{ds} = \lambda = \frac{\sin \alpha}{N \cos \varphi} \\ \frac{d\alpha}{ds} = \alpha = \frac{\operatorname{tg} \varphi \sin \alpha}{N} \end{aligned} \quad (1)$$

This method is particularly suitable for an automatic computer, as it consists of repetitive steps, making for simple programming. For the second problem, a method was desired

that would use - at least in part - the program set up for the first problem. The approximate values for α_1 and s' are corrected, using corrections $\Delta\alpha$ and Δs , returning to the first problem, using the same step as before or a smaller one. This return gave the necessary accuracy. It is possible to use a Krassovskiy, Hayfor, or Bessel ellipsoid solution; this is coded numerically. Numerical examples are given. The method is practical to a length of curve up to 10,000 km with the following accuracy: First problem: error in coordinates and end point azimuth does not exceed 0.003", regardless of the curve length. Second problem: error in length is not more than 10 cm, and it is independent of the length of the curve. Tab. 4 shows some maximum values for the azimuth error. The speed of calculation depends on the length

Card 3/5

Calculating two main...

26895
Z/024/61/007/001/001/002
D241/D306

of the curve. For the second problem and a distance of 1000 km it took about 4 minutes. The first problem at the same distance took 3 minutes. The accuracy of the results was checked for different curves. The editor for this article was Cimbalnik, Miloš, VUGTK Praha (College of Geodetics and Cartography, Prague). There are 5 figures, and 6 references: 2 Soviet-bloc and 4 non-Soviet-bloc.

ASSOCIATION: GTU Praha (Geodetical Institute, Prague)

(For Fig. 2 and Table 4 see
next card)

Card 4/5

CHARAMZA, Frantisek, zememersky inzenyr

Calculation of the analytic aerotriangulation on the automatic
computer ELLIOT 803. Geod kart obzor 8 no.8:151-155 Ag '62.

1. Geodeticky a topograficky ustav, Praha.

CHARAMZA, Frantisek, zememersicky inzenyr

Calculation of analytic aerotriangulation on the Elliott 803
automatic computer. Geod kart obzor 8 no.9:164-167 S '62.

1. Geodeticky a topograficky ustav, Praha.

CHARAMZA, Frantisek, zememersky inz.

Use of automatic computers for geodetic calculations. Geod
kart. obzor 9 no. 5: 114-116 My '63.

1. Vyzkumny ustav geodeticky, topograficky a kartograficky,
Praha.

CHARAMZA, Frantisek, inz.

Practical use of matrix calculation in automatic computer programming. Geod kart obzor 10 no.8:177-186 Aug'64.

1. Research Institute of Geodesy, Topography and Cartography, Prague.

CHARAMZA, Frantisek, inz.; KARSKY, Georgij, inz.; KASL, Josef, inz.;
KUCIAN, Jan, inz.; STASTNY, Vaclav, inz.; VISOVA, Eva, inz.

Problem of automation of geodetic calculations. Geod kart obzor
10 no.9/10:217-222 0 '64

NEDOROST, Miroslav; CHARAMZA, Jan

Calcination of anatase TiO_2 in a pilot plant rotary kiln.

Chem prum 13 no. 12: 635-638 D '63.

1. Moravske chemické závody, n.p., Ostrava, zavod Prerov.

TICHY, J.; FILIP, B.; CHARAMZA, O.

Unusual causes of dyspepsia in a worker employed in asphalt paint spraying. Pracovní lek. 13 no.2:79-81 Mr '61.

1. I vnitřní klinika UP v Olomouci; přednosta prof. dr. Pavel Lukl, z oddělení pro choroby z povolání; vedoucí lékař Dr. M. Barborík, z ústředních laboratorí KUNZ Olomouc; prim. Dr. R. Podivínský.

(PAINT toxicol) (GASTROENTEROLOGY etiol)
(OCCUPATIONAL DISEASES)

GHARAMZA, Otakar; OPAVSKY, Jiri

Preparation of highly purified I-131 hippuran. Vnitřní lek. 11
no.12:1211-1215 D ' 65

1. Radioisotopové oddelení FN Olomouc (vedoucí MUDr. M. Wiede-
mann a Farmakon), n.p. Olomouc.

Charap, Gt.

NEURONIA / Human and Animal Physiology (Normal and Pathologic)
(1951). Nervous System. General Problems

Also Jour: Ref Zhur-Biologiya, No 21, 1958, 97848

Author : Barbe, E., Barbe, H., Barvath, P., Monod, B.
Charap, Gt., Alame, H.

Inst : Not given

Title : On Götteno-Galvanic Reflex in Tuberculosis

Orig Pub: Rev. med. (NRA), 1958, 1, No 3, 35-40

Abstract: No abstract.

Card 1/1

78

CHARAP, György

BARBU, R., Zenko, dr.; BOES, Marta, dr.; ~~CHARAP, György, dr.~~;
BAROTHY, Miklos, dr.; SZIMA, Zoltan, dr.; ALEKA, Maria

Study of the nervous system in tuberculosis. Tuberk. kérdesei
9 no.5:193-200 Oct 56.

1. A Marosvásárhelyi Orvostudományi és Gyógyászati
Felsőoktatási Intézet tudósklinikájának (vezető: Barta, R.
Zeno, dr. egy. ny. r. tanár) közleménye.

(TUBERCULOSIS, physiol.

NS funct., testing methods (Hun))

(NERVOUS SYSTEM, in various dis.

tuberc., funct. tests (Hun))

VAN NAY-YAN' [Wang Nai-yen]; VIZI, I.; YEFIMOV, V.N.; KARZHAVINA, E.N.;
KIM KHI SAN; POPOV, A.B.; PIKEL'NER, L.B.; PSHITULA, M.I.;
STADNIKOV, T.; CHEN LIN-YAN'; CHARAPOV, E.I.; SHELONTSEV, I.I.;
SHIRIKOVA, N.Yu.; YAZVITSKIY, Yu.S.

Neutron resonances in Rh^{103} . Zhur. eksp. i teor. fiz. 45
no.6:1743-1753 D '63. (MIRA 17:2)

1. Ob'yedinenny institut yadernykh issledovaniy.

USSR/Cultivated Plants - Commercial. Oil-Bearing. Sugar-Bearing. M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53724

Author : Charashvili, S.Sh.

Inst : Forestry Institute

Title : The Chief Problems of Agrotechny for Eucommia

Orig Pub : Tr. In-ta lesa. AN GruzSSR, 1957, 7, 69-92

Abstract : Experiments were conducted during 1952-1954 in a number of regions (rayons) of Eastern and Western Georgia. Stratification of the seeds on ice before sowing is not necessary. The fall sowings produce better and more simultaneous sprouting. The seeds for nurseries should be gathered from eucommia forms bearing large fruit. The eucommia fruit contains almost three times more gutta than the leaves and therefore should be used as the basic raw material in obtaining gutta-percha.

Card 1/2

USSR/Cultivated Plants - Commercial. Oil-Bearing. Sugar-Bearing. M

Abs Jour : Ref Zhur Biol., No 12, 1958, 53724

The distances between the trees in the rows and between the rows should be not less than 6 m. A combination type of eucornia plantation has been developed (which was used in two variants) permitting crosswise and lengthwise mechanized cultivation. -- A.M. Smirnov

Card 2/2

- 98 -

BASINSKA, Halina; ORYLSKI, Zenon; CHARASZKIEWICZ, Aleksandra

Solubility of bismuth ferrocyanide $\text{Bi}_4 [\text{Fe} (\text{CN})_6]_3$.
Chem anal 8 no.3:473-474 '63.

1. Katedra Chemii Nieorganicznej, Uniwersytet M. Kopernika,
Torun.

CHARATONIK, J.J.

Two invariants under continuity and the incomparability of
fans. Fund math 53 no.2:187-204 '64.

1. Mathematical Institute, University, Wroclaw.

CHARATONIK, J.J.

Confluent mappings and unicoherence of continua. Fund math 56
no.2:213-220 '64.

1. Mathematical Institute of the Wroclaw University. Submitted
January 29, 1964.

CHARAZOV, D. F.

About the distribution of the Eigen values of integral equations with rational kernels in regard to parameters, by D. F. CHARAZOV. Doklady Akad. Nauk SSSR, n. Ser. 71, 1033-1035 (1950).

CHARBULA, K.

Blasting by means of compressed air. p. 266
(Uhli, Vol. 6, No. 8, Aug. 1956, Praha, Czechoslovakia)

SO: Monthly List of East European Accessions (EEAL) LC. Vol. 6, No. 12, Dec. 1957. Uncl.

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P. 185. (UHLI) (Praha, Czechoslovakia) Vol. 7, no. 6, June. 1957

SO: Monthly Index of East European Accession (EEAI) LC Vol. 7, No. 5, 1958

CHARBULA, Karel, ins.

Methods of examining the roof pressure and its effect on
gallery supports. Uhli 4 no.10:348-352 0 '62.

1. Hornicky ustav, Ceskoslovenska akademie ved, Praha.

CHARBULA, Karel, ins.

Conference on the new technology in Bratislava. Uhl 4 no.11:378 N
'62.

1. Hornický ustav, Československá akademie věd.

CHARBULA, Karel, inz.

Conference on mountain pressure and mountain mechanics. Uhli
5 no.1:36-37 Ja '63.

1. Hornický ústav, Československá akademie věd.

CHARBULA, Karel, inz.

"Results of mining research." Reviewed by Karel Charbula. Uhli 5
no.4:152 Ap '63.

1. Hornický ústav, Československá akademie věd.

CHARBULA, Karel

Scientific conference on rock pressure and rock mechanics.
Vestník CSAV 72 no.1:90-93 '63.

L 06096-67

ACC NR: AP6017899

(A)

SOURCE CODE: CZ/0078/65/000/012/0017/0017

INVENTOR: Bek, Eduard (Engineer; Prague); Charbula, Karel (Engineer; Prague)

23
B

ORG: none

TITLE: [Device for recording seismic acoustic pulses] CZ Pat. No. PV 4495-64, Class 42

SOURCE: Vynalez, no. 12, 1965, 17

TOPIC TAGS: recording equipment, recording paper, seismic wave, seismograph, seismologic instrument, seismology

12

ABSTRACT: A method of recording seismoacoustic pulses is described in which elastic vibrations of audio frequencies of from 10 - 6,000c are transformed by an electromagnetic sensing element into electric vibrations which are then amplified. The distinguishing feature of the method is that changes in the input voltage in the push-pull amplifier in which the grid overvoltage is approximately equal to the cutoff overvoltage are converted into changes in the feed direct current which are recorded by the recording device.

SUB CODE: 08,09,17/ SUBM DATE: 07Aug64

Card 1/1 LC

CHARBYI, I. A.

168770

USSR/Physics - Filtration
Wells

Jun 50

"Flow Toward Imperfect Wells During the Simultaneous Existence of Different Laws Governing Filtration in the Strata," I. A. Charbyy, Inst of Mech, Acad Sci USSR

"Iz Ak Nauk SSSR, Otdel Tekh Nauk" No 6, pp 801-818

Considers breakdown of D'Arcy's linear law of filtration near wells, dependence of depression on yield, yield versus depression for wells with circular perforation, local effect of circular perforations, flow toward slit-form filters

168770

USSR/Physics - Filtration (Contd)

Jun 50

Method of handling yield-depression indicatri-
cial curves as obtained in investigations of
wells. Submitted 28 Mar 50 by Acad A. I. Mek-
racyov.

168770

NEKRASOVSKIY, Yakov El'konovich; PETRENKO, Yevgeniy Vasil'yevich;
~~GEARCHENKO, A.F.~~, otv.red.; SHUSHKOVSKAYA, Ye.L., red.izd-va;
LOMILINA, L.N., tekhn.red.

[Baring and developing of thin and medium thick steep seams]
Vskrytie i podgotovka tonkikh i srednei moshchnosti krutykh
plastov. Moskva, Ugletekhnizdat, 1959. 291 p. (MIRA 12:11)
(Mining engineering) (Coal mines and mining)

L 41050-65 EPA(a)-2/EWP(k)/EWA(c)/EWT(m)/EWP(b)/I/EWA(d)/EWP(v)/EWP(t) Pf-4
IJP(c) JD/HM/HW

ACCESSION NR: AP5005616

S/0125/65/000/002/0076/0077

37

36

AUTHOR: Gurevich, S. M. (Doctor of technical sciences); Charchenko, G.K.
(Engineer) B

TITLE: New heating source for diffusion welding 4

SOURCE: Avtomaticheskaya svarka, no. 2, 1965, 76-77

TOPIC TAGS: welding, diffusion welding d

ABSTRACT: A Soviet-made NIK-220-1000 infrared quartz iodine tungsten-filament lamp was tested as a source of heating in vacuum (10^{-4} torr) diffusion welding of titanium-alloy 25-mm-diameter 3-mm-thick tubes. At 380 v ac applied to the NIK lamp, the tubes acquired a temperature of 950-1000C in 1.5-2 min, and their welds were no different from those obtainable by the conventional h-f welding process. It is hoped that the iodine lamp will permit elimination of the complicated and expensive h-f equipment in many cases. Orig. art. has: no figures, formulas, or tables.

Card 1/2

L 41050-65

ACCESSION NR: AP5005616

ASSOCIATION: Institut elektrosvarld im. Ye. O. Patona AN UkrSSR (Institute of Electric Welding, AN UkrSSR)

SUBMITTED: 00

ENCL: 00

SUB CODE: MM

NO REF SOV: 000

OTHER: 000

CC
Card 2/2

CHARDAKLIEV, Vasil

[Sole, Veterinaria Shika, Vol. 59, No. 2, 1962 (continued)]

11. "Veterinarian in Soviet Cyrenaica"; p. 21.

"Data on the State of the Sheep Industry in the USSR, 1961-1962" (1962) at the Higher Veterinary Institute and the USSR Ministry of Agriculture, Senior Veterinarian in the USSR Ministry of Agriculture, Senior Veterinarian in the USSR Ministry of Agriculture.

12. "Veterinary Assistant Supervisor in the Trade Network and Public Catering and the State Veterinary Food Inspection," Of Asen 17. "VILKOV" (not identified) (identified): pp. 23-25.

13. "Vilk Content and Properties When Cows Are Fed on Milk," In: "VILKOV", 23-24, and "VILKOV" (not identified): pp. 23-24.

CHARDAROV, I. S.

189T52

USSR/Hydrology - Reservoirs

Aug 51

"Determinating the Estimated Discharge of Rain Floods Through Spillways When Designing Small Reservoirs of Girders and Logs for Water Collecting Areas Less Than 100 Square Kilometers," I. S. Chardarov, Engr

"Gidrotekh i Meliorat" No 8, pp 55-63

Chardarov assumes his method saves labor and expense. Prof D. I. Sokolovskiy, on the basis of exptl data, computed ratio of flow velocity to level of reservoir and divided it into 3 gradations (1) reservoirs above 50,000 sq km; (2)

189T52

USSR/Hydrology - Reservoirs (Contd)

Aug 51

between 2,000 and 50,000 sq km; and (3) below 2,000 sq km. Chardarov derived and tabulated data for reservoirs of 100 sq km.

189T52

CHARDIN, S. I.

CHARDIN, S. I. -- "Smoothing Out the Graph of Heat Consumption in Mechanical Laundries." Published by the Min Communal Economy RSFSR. Academy of the Communal Economy imeni K. D. Pamfilov. Moscow, 1955. (Dissertation for the Degree of Candidate in Technical Sciences).

So.: Knizhnaya Letopis', No. 2, 1956.

CHARDIN, S.I.

Levelling the graph of heat use in mechanical laundries. Ved.1 san.
tekh.no.5:8-12 Ny '56. (MIRA 9:9)
(Laundries)

CHARDIN, S.I.

Comparative tests of heat accumulators with a heating surface of steel pipes and cast iron radiator sections. Vod. 1 san. tekhn. no.10: 26-30 '59.

(MIRA 13:1)

(Baths, Russian)

(Heat regenerators)

CHARDIN, S.I., kand.tekhn.nauk

Laundry industry in foreign countries. Gor.khoz.Mosk. 36 no.12:
35-36 D '62. (MIRA 16:2)

(Laundry industry)

CHEERNIKOV, I.A., kand. tekhn. nauk; CHARDIN, S.I.; RHISTER, G.M.,
red.

[Technical specifications for designing swimming pools]
Tekhnicheskie usloviia proektirovaniia kupal'no-
plavatel'nykh basseinov. Moskva, 1962. 36 p.
(MIRA 17:10)

1. Akademiya kommunal'nogo khozyaystva. Moscow.

CHARDYMOV, I.Ya.; MANOKHIN, A.A.

Improve the quality in manufacturing semiautomatic block apparatus for the BPLTs system. Avtom., telem.i svyaz' 6 no.1:36 Ja '62. (MIRA 15:3)

1. Zamestitel' nachal'nika Kotovskoy distantzii signalizatsii i svyazi Odesskoy dorogi (for Chardymov). 2. Nachal'nik otdela signalizatsii, tsentralizatsii i blokirovki sluzhby signalizatsii i svyazi Ashkhabadskoy dorogi, vneshtatnyy korrespondent zhurnala "Avtomatika, telemekhanika i svyaz'" (for Manokhin).
(Railroads--Signaling--Block system)